This listing of claims replaces all previous listings of claims in the application.

Listing of Claims:

1. (previously presented) A recombinant immunoconjugate, comprising a therapeutic agent or a detectable label covalently linked to an RFB4 disulfide-stabilized Fv (dsFv) having a variable heavy chain (V_H) comprising SEQ ID NO:2 in which a Cys residue is substituted for Arg at position 44; and a variable light chain (V_L) comprising SEQ ID NO:4 in which a Cys residue is substituted for Gly at position 100.

2. (original) The recombinant immunoconjugate of claim 1, wherein said therapeutic agent is a toxin.

3. (original) The recombinant immunoconjugate of claim 2, wherein said toxin is a *Pseudomonas* exotoxin (PE) or a cytotoxic fragment thereof.

4. (original) The recombinant immunoconjugate of claim 3, wherein said cytotoxic fragment is PE38.

5-6. (cancelled)

7. (previously presented) The recombinant immunoconjugate of claim 3, wherein said variable heavy (V_H) chain is covalently linked to the amino terminus of said toxin.

8. (previously presented) The recombinant immunoconjugate of claim 1, wherein said V_H chain is covalently linked to said V_L chain through a linker peptide.

9. (previously presented) The recombinant immunoconjugate of claim 1, wherein said V_H chain is linked to said V_L chain through a cysteine-cysteine disulfide bond.

10. (original) The recombinant immunoconjugate of claim 8, wherein said linker peptide has the sequence of SEQ ID NO:5.

11. (previously presented) An expression cassette encoding a recombinant immunoconjugate comprising a sequence encoding for a toxin peptide and an RFB4 disulfide-stabilized Fv (dsFv) having a variable heavy chain (V_H) comprising SEQ ID NO:2 in which a Cys residue is substituted for Arg at position 44; and a variable light chain (V_L) comprising SEQ ID NO:4 in which a Cys residue is substituted for Gly at position 100.

12. (cancelled).

13. (original) The expression cassette of claim 11, wherein said toxin is a *Pseudomonas* exotoxin (PE) or a cytotoxic fragment thereof.

14. (original) The expression cassette of claim 11, wherein said cytotoxic fragment is PE38.

15. (cancelled)

16. (previously presented) The expression cassette of claim 11, further comprising a sequence encoding for a linker peptide having the sequence of SEQ ID NO:5.

17. (original) A host cell comprising an expression cassette of claim 11.

18-49. (cancelled)

50. (previously presented) A recombinant immunoconjugate, comprising a therapeutic agent or a detectable label covalently linked to a recombinant RFB4 disulfide-stabilized Fv (dsFv) antibody, wherein said antibody has:

(i) a variable heavy chain (V_H) that is at least 90% identical to SEQ ID NO:2, where said V_H has the complementarity determining regions (CDRs) of reference SEQ ID NO:2 and a cysteine at amino acid position 44, and

(ii) a variable light chain (V_L) that is at least 90% identical to SEQ ID NO:4, where said V_L has the CDRs of reference SEQ ID NO:4 and a cysteine at amino acid position 100.

51. (previously presented) The recombinant immunoconjugate of claim 50, wherein said therapeutic agent is a toxin.

52. (previously presented) The recombinant immunoconjugate of claim 51, wherein said toxin is a *Pseudomonas* exotoxin (PE) or a cytotoxic fragment thereof.

53. (previously presented) The recombinant immunoconjugate of claim 52, wherein said cytotoxic fragment is PE38.

54. (previously presented) An expression cassette encoding a recombinant immunoconjugates of claim 50.

55. (previously presented) A host cell comprising an expression cassette of claim 54.

56. (previously presented) A recombinant immunoconjugate, comprising a therapeutic agent or a detectable label covalently linked to a recombinant RFB4 disulfide-stabilized Fv (dsFv) antibody, wherein said antibody has:

(i) a variable heavy chain (V_H) that is at least 95% identical to SEQ ID NO:2, where said V_H has the complementarity determining regions (CDRs) of reference SEQ ID NO:2 and a cysteine at amino acid position 44, and

(ii) a variable light chain (V_L) that is at least 95% identical to SEQ ID NO:4, where said V_L has the CDRs of reference SEQ ID NO:4 and a cysteine at amino acid position 100.

57. (currently amended) A method for inhibiting the growth of a malignant B-cell *in vivo* that expresses a CD22 molecule on the surface of the cell, said method comprising:

contacting said malignant B-cell with an effective amount of a recombinant immunoconjugates *in vivo* comprising a therapeutic agent or a detectable label covalently linked to an RFB4 disulfide-stabilized Fv (dsFv) having a variable heavy chain (V_H) comprising SEQ ID NO:2 in which a Cys residue is substituted for Arg at position 44; and a variable light chain

(V_L) comprising SEQ ID NO:4 in which a Cys residue is substituted for Gly at position 100, thereby inhibiting the growth of the malignant B-cell.

58. (previously presented) The method of claim 57, wherein said therapeutic agent is a *Pseudomonas* exotoxin (PE) or a cytotoxic fragment thereof.

59. (previously presented) The method of claim 58, wherein said cytotoxic fragment is PE38.

60. (previously presented) The method of claim 58, wherein said variable heavy chain is covalently linked at the carboxyl terminus of said therapeutic agent.

61. (previously presented) The method of claim 57, wherein said V_H chain is covalently linked to said V_L chain through a linker peptide.

62. (previously presented) The method of claim 57, wherein said V_H chain is linked to said V_L chain through a cysteine-cysteine disulfide bond.

63. (previously presented) The method of claim 61, wherein said linker peptide has the sequence of SEQ ID NO:5.

64. (previously presented) The method of claim 57, wherein said malignant B-cell is contacted *in vivo*.

65. (previously presented) The method of claim 57, wherein said malignant B-cell is selected from the group consisting of: a rodent B-cell, a canine B-cell, and a primate B-cell.

66. (previously presented) The method of claim 57, wherein said malignant B cell is a chronic lymphocytic leukemia cell.

67. (previously presented) The method of claim 57, wherein said malignant B cell is a hairy cell leukemia cell.

68. (previously presented) The method of claim 57, wherein said malignant B cell is a prolymphocytic leukemia cell.

69. (previously presented)The method of claim 57, wherein said malignant B cell is a B cell lymphoma cell.

70. (previously presented) A pharmaceutical composition comprising an effective amount of a recombinant immunoconjugate of claim 1.

71. (previously presented) A pharmaceutical composition comprising an effective amount of a recombinant immunoconjugate of claim 50.

72. (previously presented) A pharmaceutical composition comprising an effective amount of a recombinant immunoconjugate of claim 56.